

REMARKS

In the Office Action, the Examiner noted that Claims 1 through 30 were pending in the Application. The Examiner rejected all claims. Applicants traverse the rejections below.

I. Traversal of the Objection to the Specification

The Abstract was objected to because of length. In this Amendment, a new Abstract has been submitted which complies with the length requirements. Accordingly, Applicants respectfully request withdrawal of the Objection.

II Traversal of the Rejections over the Cited Art

The Examiner rejected Claims 1 - 5, 11 - 18 and 21 - 30 under 35 U.S.C. 103(a) as being unpatentable over the Holzle et al article (Holzle) in view of U.S. Patent No. 6,247,025 to Bacon. The Examiner rejected Claims 6 - 10 under 35 U.S.C. 103(a) as being unpatentable over Holzle in view of Bacon and further in view of U.S. Patent No. 6,182,177 to Harriman. The Examiner rejected Claims 19 and 20 under 35 U.S.C. 103(a) as being unpatentable over Holzle in view of Bacon and further in view of the article by Lee et al (Lee), further in view of US Patent No. 6,370,687 to Shimura. Applicants traverse this rejection below.

A. The Present Invention

The present invention provides a polymorphic call site for a system executing an object oriented program which has polymorphic inline caches having locking slots. Each time the polymorphic method is called having a new object type, a new slot in the polymorphic inline cache

is created.

B. No Reason to Combine the Cited Art

Applicants respectfully traverse the Examiner's rejection that independent Claims 1, 19, 20, 21 and 26 are obvious because the Examiner has failed to provide a case of prima facie obviousness. Applicants respectfully request withdrawal of this rejection.

Applicants note that MPEP 2142 requires the Examiner to bear the initial burden of factually supporting any prima facie conclusion of obviousness. If the Examiner does not produce a prima facie conclusion, Applicants are under no obligation to submit evidence of non-obviousness.

The Examiner has not indicated the manner in which the cited prior art suggests the desirability of the combination of the cited art (MPEP 2143.01). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion, or incentive that supports this combination of art. The Examiner has not indicated evidence that there is a teaching, motivation, suggestion to select and combine the cited references. The Examiner has not indicated some logical reason apparent from the cited art that would justify a combination or modification of the cited references. The Examiner has not identified any reason given in the prior art which would motivate the person skilled in the art to combine the cited references to arrive at the claimed invention. Where no justification exists for the proposed combination of cited art, prima facie obviousness will not have been established. When the cited art simply does not provide an impetus to do what the inventor has done, the Examiner's case of prima facie obviousness will fail.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference

teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 2143 - 2143.03 for decisions pertinent to each of these criteria.

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). See MPEP Section 2144 - Section 2144.09 for examples of reasoning supporting obviousness rejections.

When the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the examiner to explain why the combination of the teachings is proper. *Ex parte Skinner*, 2 USPQ2d 1788 (Bd. Pat. App. & Inter. 1986). A statement of a rejection that includes a large number of rejections must explain with reasonable specificity at least one rejection, otherwise the examiner procedurally fails to establish a prima facie case of obviousness. *Ex parte Blanc*, 13 USPQ2d 1383 (Bd. Pat. App. & Inter. 1989) (Rejection based on nine references which included at least 40 prior art rejections without explaining any one rejection with reasonable specificity was reversed as procedurally failing to establish a prima facie case of obviousness.).

If the examiner determines there is factual support for rejecting the claimed invention under 35 U.S.C. 103, the examiner must then consider any evidence supporting the patentability of the claimed invention, such as any evidence in the specification or any other evidence submitted by the

applicant. The ultimate determination of patentability is based on the entire record, by a preponderance of evidence, with due consideration to the persuasiveness of any arguments and any secondary evidence. In *re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The legal standard of "a preponderance of evidence" requires the evidence to be more convincing than the evidence which is offered in opposition to it. With regard to rejections under 35 U.S.C. 103, the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teachings establish a prima facie case of obviousness) is more probable than not.

When an applicant submits evidence, whether in the specification as originally filed or in reply to a rejection, the examiner must reconsider the patentability of the claimed invention. The decision on patentability must be made based upon consideration of all the evidence, including the evidence submitted by the examiner and the evidence submitted by the applicant. A decision to make or maintain a rejection in the face of all the evidence must show that it was based on the totality of the evidence. Facts established by rebuttal evidence must be evaluated along with the facts on which the conclusion of obviousness was reached, not against the conclusion itself. In *re Eli Lilly & Co.*, 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir. 1990).

See *In re Piasecki*, 745 F.2d 1468, 223 USPQ 785 (Fed. Cir. 1984) for a discussion of the proper roles of the examiner's prima facie case and applicant's rebuttal evidence in the final determination of obviousness. See MPEP Section 706.02(j) for a discussion of the proper contents of a rejection under 35 U.S.C. 103.

In the Office Action, the reasons for combining Holzle and Bacon are quite tenuous. The Office Action states that Holzle, on page 8, line 26, suggests "avoiding issues from contention between simultaneously executing processes." Applicants are unable to find this teaching from page 8. The passage "the case analysis technique implemented as part of the Typed Smalltalk system."

This is not analogous to a multi-threading environment, as claimed in the Office Action. Bacon is directed to a locking and unlocking mechanism for controlling access to objects in a multi-threaded computer processing system. In Bacon, a thread pointer and a one-bit flag (a Bacon bit) controls the access. When an object is not locked, the pointer and Bacon bit are set to 0. When an object is locked by a particular thread, the pointer is set to a value that identifies the thread, and if no other threads are waiting to lock the object, the Bacon bit is 0. If other threads are waiting, the Bacon bit is set to one. Bacon has nothing to do with polymorphic inline caches (PICs), or the problems associated with them. Holzle utilizes PICs as a way to reduce the overhead polymorphic message sends by extending inline caches. Multi-threading is not apparently discussed in Holzle. Bacon has nothing to do with PICs and implementing a polymorphic call site.

The reasons for combining the other references with Holzle are even more tenuous. Harriman is directed to a technique for queuing commands. It utilizes one or more token queues and a storage block to avoid maintaining multiple separate queues. It is reasoned that this is combinable with Holzle and Bacon because it “teaches tracking of entries in the free token queue 115 may be accomplished by maintaining a list of available slots, or by maintaining an array of bits indicating the status of each slot in the command storage block 135.” In Harriman, the slots are in the command storage block 135 and are filled by incoming commands, and tokens are removed. These slots are not slots in a polymorphic inline cache. These slots do not teach, suggest or disclose anything with respect to a slot in a PIC. Harriman has nothing to do with object oriented technology. Accordingly, Applicants submit that the art and the Office Action fail to provide the necessary rational for combining them.

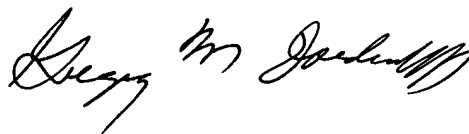
Accordingly, Applicants have demonstrated that neither the art nor the Office Action provide the required rational for combining Holzle with Bacon or Holzle with Bacon and Harriman. Since these combinations were used in whole or part in the rejections of all of the independent claims (Claims 1, 19, 20, 21 and 26), it follows that the rejection of these claims under 35 U.S.C. 103(a) is improper and do not render these claims obvious.

Since independent Claims 1, 19, 20, 21 and 26 are not obvious, it follows that the dependent claims would also be not obvious. Applicants requests withdrawal of the rejection to these dependant claims.

III. Summary

Applicants have presented technical explanations and arguments fully supporting their position that a prima facie case of obviousness has not been provided in the Office Action, and that the rejection is thus non-sustainable. Accordingly, Applicants submit that the present Application is in a condition for Allowance. Reconsideration of the claims and a Notice of Allowance are earnestly solicited.

Respectfully submitted,



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